

## **WIDE DYNAMIC RANGE MULTISTAGE PLASMATRON REFORMER SYSTEM**

### **Abstract of the Disclosure**

- 5 A method and apparatus for a multistage plasmatron fuel reformer system having a wide dynamic operational range. In one aspect, the system includes a plasmatron configured for low flow operation followed by a reaction extension cylinder and then by a nozzle section capable of providing additional air and/or fuel inputs. The nozzle section is then followed by another reaction extension region. When high flow rate of the system is
- 10 needed, the low fuel flow rate provided by the plasmatron followed by the first reaction extension region provides the high temperature used to effectively initiate the partial oxidation reaction in the next section. The initiation of this reaction may also be facilitated by the presence of hydrogen.